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PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES¹

Ex parte ROBERT GEORGE BEAN, CLARK EDWARD LUBBERS,
and RANDY L. ROBERSON

Appeal 2008-0944
Application 10/669,196
Technology Center 2100

Decided: January 26, 2009

Before JAMES D. THOMAS, ALLEN R. MACDONALD, and ST. JOHN
COURTENAY III, *Administrative Patent Judges*.

MACDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Introduction

Appellants appeal under 35 U.S.C. § 134 from a final rejection of
claims 1-21. We have jurisdiction under 35 U.S.C. § 6(b).

¹ Oral Hearing held on May 22, 2008.

According to Appellants, the invention “stores data with additional information.” (Spec. 1, ll. 23-24).

Exemplary Claim(s)

Exemplary independent claims 1 and 8 under appeal read as follows:

1. A method for storing data comprising the step of storing first information with first data, wherein the first information directly indicates the status of the first data.
8. A method for protecting data comprising the step of accompanying first information with first data, wherein the first information indicates status of second data associated with the first data.

Prior Art

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

| | | |
|---------|--------------|---------------|
| Morgan | US 5,379,411 | Jan. 3, 1995 |
| Lubbers | US 5,774,643 | Jun. 30, 1998 |

Rejections

The Examiner rejected claims 1-21 under 35 U.S.C. § 102(b) as being anticipated by Lubbers.

The Examiner rejected claims 1-5, 8-12, 15, 16, and 18-21 under 35 U.S.C. § 102(b) as being anticipated by Morgan.

Examiner’s Findings or Conclusions

(1) The Examiner found that Lubbers describes “storing blocks of data (see figure 2 and column 5 lines 49-54) . . . along with FE blocks that

identify whether data blocks are considered bad as to reliability (see column 6 lines 43-53).” The Examiner found that this teaches the “storing first information with first data” of claim 1. (Ans. 3). (Emphasis added).

(2) The Examiner found that Lubbers also describes “storing device specific information (see figure 2 and column 6 lines 18-22) such as ID and FE blocks.” The Examiner found that this description teaches the “accompanying first data with first information” limitation of claim 8 (Ans. 4); and the “first information accompanying first data” limitation of claim 15. (Ans. 6).

(3) The Examiner found that Morgan describes “blocks of data with code bytes have [sic] a number of code bits and a block of configured data (see column 5 lines 55-60).” The Examiner found that this description teaches the “first information with first data” limitation of claim 1. (Ans. 7).

(4) The Examiner also found, in rejecting claim 1, that “Morgan further discloses the code bits are reset to indicate the data transfer was successful, which indicates no fault in the configured data (see column 6 lines 23-28), thus indicating first information directly indicates status of first [sic] [second] data associated with first data.” (Ans. 7).

(5) The Examiner found that Morgan describes “blocks of data with code byte [sic] and check bytes . . . (see column 5 lines 60-65).” The Examiner found that this description teaches the “accompanying first information with first data” limitations of claim 8 and 15. (Ans. 8 and 9 – occurs twice).

(6) The Examiner also found, in rejecting claims 8 and 15, that “Morgan further discloses the code byte is reset to indicate the data transfer was successful, which indicates no fault in the configured data (see column 6 lines 23-28), [thus] indicating first information indicates status of second data associated with first data.” (Ans. 8 and 9 – occurs twice).

Appellants’ Contentions

(1) As to the Examiner’s finding (1) *supra*, Appellants contend that the subject matter of claims 1-7, 10, and 11, is not anticipated by Lubbers because when rejecting these claims, the Examiner erred in construing the term “with” in independent claim 1. (App. Br. 6-8).

(2) As to the Examiner’s finding (2) *supra*, Appellants contend that the subject matter of claims 8, 9, and 12-21, is not anticipated by Lubbers because when rejecting these claims, the Examiner erred in construing the phrase “accompanying . . . with” in independent claim 8 (App. Br. 9-10), and the term “accompanying” in independent claim 15. (App. Br. 10-11).

(3) Appellants do not dispute the Examiner’s finding (3) *supra*.

(4) As to the Examiner’s finding (4) *supra*, Appellants contend that the subject matter of claims 1-5, 10, and 11 is not anticipated by Morgan because Morgan does not describe storing first information with first data wherein the first information “directly indicates the status of the first data” as required by claim 1. (App. Br. 11-15).

(5) Appellants do not dispute the Examiner's finding (5) *supra*.

(6) As to the Examiner's finding (6) *supra*, Appellants contend that the subject matter of claims 8, 9, 12, 15, 16, and 18-21 is not anticipated by Morgan because Morgan does not describe accompanying first information with first data wherein the first information "indicates status of second data associated with the first data" as required by claims 8 and 15. (App. Br. 15-17).

Result

We affirm.

ISSUE(S)

Issues on Appeal

(1)

Whether Appellants have shown that the Examiner has erred because the proper constructions of "with", "accompanying . . . with", and "accompanying", in claims 1, 8, and 15 respectively, are not taught by Lubbers?

(2)

Whether Appellants have shown that the Examiner has erred because Morgan does not teach the specific type of "first information" required by claims 1, 8, and 15?

FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Appellants' Admissions

1. When asked by this panel if Figures 3A and 3B are prior art, Appellants representative stated, "It's not part of this invention. This invention distinguishes from that related art; yes." (Transcript of Oral Hearing 2).
2. With respect to Figure 3A, Appellants state: "FIGURE 3A illustrates a disc array group 300 that is used in a RAID configuration. The disc array group 300 includes devices 310, 320, 330 and 340. The devices are preferred disc drives. Devices 310, 320, 330 and 340 store data blocks 1-12 in a RAID 5 configuration as shown." (Spec. 3, ll. 23-26).
3. Appellants further state: "There are four RAID slivers illustrated, with one sliver illustrated as blocks 1, 2, 3 and PI. The data blocks are stored in respective portions 314, 324, 334 and 344 of devices 310, 320, 330 and 340." (Spec. 3, ll. 26-29).
4. Appellants then state: "Portions 318, 328, 338 and 348, store metadata information about the data blocks. In particular, portions 318, 328, 338 and 348 store so-called 'Forced Error' ('FE') bits. These FE-bits are used to signify if the data in the associated data blocks on the respective drives are unreliable." (Spec. 3, ll. 29-32).
5. Appellants also state: "For example, an FE bit in portion 318 of drive 310 is associated with data block 1." (Spec. 3, ll. 32-33).

6. With respect to Figure 3B, Appellants state: “When writing new data to a block designated as having unreliable data, controller 120 clears the corresponding FE-bit in FE-bit table 350, writes the data to the device and also writes the associated FE-bit stored on the device.” (Spec. 4, ll. 7-9).

Appellants’ Invention

7. According to Appellants: “The present invention removes the need for the FE-bit table 350 and the portions 318, 328, 338 and 348 of devices 310, 320, 330 and 340 in FIGURE 3A.” (Spec. 4, ll. 16-17).

8. Appellants further state: “Referring to FIGURE 4A, a storage scheme of the present invention is illustrated. A data block 400 is shown that includes a data portion 410 and appended information 420.” (Spec. 4, ll. 18-20).

9. Appellants then state: “An example of appended information 420 is a ‘Data Integrity Field’ (‘DIF’) that includes a ‘Reference Tag’ (‘REF TAG’), usually a ‘Virtual Block Address’ (‘VBA’) or a ‘Logical Block Address’ (‘LBA’), portion 422, a ‘Metadata Tag’ (‘META TAG’), usually a ‘Logical Unit ID’ with other possible ‘metadata’ flags, portion 424, and a check sum (‘CHECK SUM’) portion 426.” (Spec. 4, ll. 20-24).

10. “For purposes of the present invention, data is used in a general sense to include actual user, system and operating environment data; system and operating environment information not generally available to a user; programs; etc.” (Spec. 3, ll. 19-22).

Lubbers Prior Art

11. The prior art Lubbers patent describes that in Figure 2: “Every disk drive carries certain extra information on it to permit identification of the disk drive, as well as other pertinent information. Each drive, at the lower extent of the table in FIG. 2, includes device specific information, including an ID block, an FE block, and an FE-Dir block.” (Col. 6, ll. 18-22).

12. Lubbers also describes that in Figure 2: “Part of the device or member metadata is a forced error box labeled FE, one such box being associated with each disk drive #1-#5.” (Col. 6, ll. 43-45).

13. Lubbers further describes: “The FE box represents one or more blocks of data. Within the FE blocks are a single bit per device data block, i.e. LBN and parity. Anotherwords [sic], each data block on each of the drives has an FE bit.” (Col 6, ll. 45-48).

14. Lubbers then describes: “The single bit represents whether the associated block can be reliably used in Xor calculations. If the bit is ‘set’, (e.g. a “1”), as will be explained hereinafter, the data block is considered bad as to its reliability, and therefore the block, or any of its bits, cannot be used for Xor calculations.” (Col 6, ll. 48-53).

Morgan Prior Art

15. The prior art Morgan patent describes that:

Predetermined code bits in a known storage location are set to provide information relating to the fault. Preferably, the predetermined code bits are part of a byte appended to a data block. In one embodiment, data blocks are generated by the array storage system from data received from the host system

and the code byte is appended to each block of data, together with check bytes. When a fault occurs, predetermined code bits of the code byte are set or reset, depending upon the particular operation in progress.

(Col. 2, ll. 14-25).

16. The prior art Morgan patent further describes that “in step 184 a data block is written to the spare device where predetermined code bits of the code byte associated with this block are set to indicate that the reconstruction operation failed on this data block.” (Col. 9, ll. 11-15).

PRINCIPLES OF LAW

Burden on Appeal

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner’s position. *Cf. In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.”) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). *See also Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (“As we explained in *In re Oetiker*, the *prima facie* case is merely a procedure device that enables an appropriate shift of the burden of production.”) *See Id.* (“Once the applicant is so notified, the burden shifts to the applicant to rebut the *prima facie* case with evidence and/or argument.”)

For a rejection under § 102, Appellants may sustain this burden by showing that the prior art reference relied upon by the Examiner fails to disclose an element of the claim. It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every

element of the claim. See *In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1457 (Fed. Cir. 1984).

Claim Construction

"The Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art." *In re Lowry*, 32 F.3d 1579, 1582 (Fed. Cir. 1994) (citing *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983)). "Claims must be read in view of the specification, of which they are a part." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). "[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)).

Non-functional Descriptive Material

Non-functional descriptive material recorded or stored in a memory or other medium (i.e., substrate) is treated as analogous to printed matter cases where what is printed on a substrate bears no functional relationship to the substrate and is given no patentable weight. See *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) ("Where the printed matter is not functionally related to the substrate, printed matter will not distinguish the invention from the prior art in terms of patentability.

Although the printed matter must be considered, in that situation it may not be entitled to patentable weight.”). *See also Ex parte Curry*, 84 USPQ2d 1272 (BPAI 2005) (informative) (Federal Circuit Appeal No. 2006-1003, *aff’d* Rule 36 Jun 12, 2006) (nonprecedential). The Examiner need not give patentable weight to descriptive material absent a new and unobvious functional relationship between the descriptive material and the substrate. *See In re Lowry*, 32 F.3d 1579, 1582-83 (Fed. Cir. 1994); *In re Ngai*, 367 F.3d 1336, 1338 (Fed. Cir. 2004). *See also Ex parte Nehls*, <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071823.pdf> (BPAI Jan. 28, 2008) (precedential); *Ex parte Mathias*, 84 USPQ2d 1276 (BPAI 2005) (informative) (191 Fed. Appx. 959 (Fed. Cir. 2006) (nonprecedential)).

ANALYSIS

Lubbers Prior Art Rejections

With respect to independent claim 1, Appellants argue that the Examiner has erred because Lubbers does not teach “with” as is claimed by Appellants, and “[t]he plain meaning of the term with is ‘together.’” (App. Br. 9). Appellants go on to argue that “[i]f the *first information* is stored in one block and the *first data* is stored in a different block, they cannot reasonably be viewed as being stored with each other because they are stored apart at different block addresses.”

We disagree. We conclude that the Examiner's construction of the word *with* is reasonable. This is reinforced by Appellants themselves who use the phrase "associated with" in describing related data and information which are stored at different locations (FF 5).

Additionally, even if we were to adopt Appellants position that (a) storing first information and first data at the same location (FF 8) is different from (b) sequentially storing the data and information at separate locations (Lubbers reference), the claim before us does not distinguish between these two storage scenarios because the word *with* is applicable to both. In the first, the word *with* refers to a spatial relationship, and in the second the word *with* refers to a time relationship which is the sequential storage.

With respect to independent claims 8 and 15, Appellants present arguments which are analogous to the argument presented with respect to claim 1. These arguments fail for the same reasoning.

Therefore, for the reasons above, Appellants have not established that the Examiner erred with respect to this rejection of claims 1-21 under § 102(b).

Morgan Prior Art Rejections

With respect to claim 1, although Appellants do not dispute that Morgan describes storing first information with first data in the same block, Appellants argue that the Examiner has erred because the first information in Morgan does not indicate the status of the first data as is claimed by Appellants (App. Br. 13).

We disagree. Even if we were to agree with Appellants that the first information in Morgan does not indicate the status of the first data, ultimately we give no weight to the meaning of the first information. Rather, we give weight only to the aspects of the data structure (descriptive material) which are functionally related to the substrate (storage device or storage circuitry). Namely, that there is data, there is information, and they are stored with each other. We see no question that these limitations are functionally related to the substrate as they serve to improve the efficiency of substrate usage or operation, for example, as set forth by Appellants at lines 5-9 of page 6 of the Specification. In contrast, the contents of the data or information are not themselves functionally related to either the substrate or the circuitry. That is, as claimed, the contents are non-functional descriptive material in that the content does not change the functioning of either the storage device or the storage circuitry.

With respect to independent claims 8 and 15, Appellants present arguments which are analogous to the argument presented with respect to claim 1. These arguments fail for the same reasoning.

Therefore, for the reasons above, Appellants have not established that the Examiner erred with respect to this rejection of claims 1-5, 8-12, 15, 16, and 18-21 under § 102(b).

CONCLUSION OF LAW

(1) Appellants have failed to establish that the Examiner erred in rejecting claims 1-21 as being unpatentable under 35 U.S.C. § 102(b) over Lubbers.

(2) Appellants have failed to establish that the Examiner erred in rejecting claims 1-5, 8-12, 15, 16, and 18-21 as being unpatentable under 35 U.S.C. § 102(b) over Morgan.

(3) Claims 1-21 are not patentable.

DECISION

The Examiner's rejections of claims 1-21 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a). See 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

pgc

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